**IN THE CLAIMS:**

1. (Currently amended) An electronic device, comprising a sensor sensitive to position of a conductive or ferrous material, said sensor comprising a single coil inductance transducer, ~~and~~ a temperature measurement circuit for providing a temperature output derived from said sensor, a position measuring circuit for measuring position of said conductive or ferrous material, and a voltage controlled gain adjusting device, wherein said temperature measurement circuit provides a voltage proportional to temperature to said voltage controlled gain adjusting device to adjust ~~adjusts sensor~~ output voltage of said position measuring circuit to provide ~~circuit~~ temperature compensated sensor ~~output~~ data ~~independent of temperature of said conductive or ferrous material~~, wherein said temperature measurement circuit uses a signal derived from resistance of said single coil inductance transducer to provide said voltage proportional to ~~correct for~~ temperature.

2. (Previously amended) The electronic device as recited in claim 1, wherein said conductive or ferrous material comprises a magnetically permeable member, wherein said magnetically permeable member is moveable.

3. (Previously amended) The electronic device as recited in claim 2, wherein said moveable magnetically permeable member is located within said single coil inductance transducer.

4. (Cancel)

5. (original) The electronic device as recited in claim 1, wherein said sensor is a displacement sensor.

6. (original) The electronic device as recited in claim 1, wherein said sensor comprises input pads for receiving a first signal and a second signal, said first signal having a higher frequency than said second signal.

7. (Cancel)

8. (Currently amended) The electronic device as recited in claim 1, wherein said ~~circuit~~ voltage controlled gain adjusting device comprises a variable gain amplifier or a microprocessor.

9. (original) The electronic device as recited in claim 1, wherein said magnetically permeable member comprises a highly permeable material.

10. (original) The electronic device as recited in claim 9, wherein said highly permeable material comprises permalloy, ferrite, and 400 series stainless steel.

11. (original) The electronic device as recited in claim 1, wherein said magnetically permeable member comprises magnetoelastic characteristics.

12. (original) The electronic device as recited in claim 11, wherein said magnetoelastic characteristics are modulated by strain, stress, or torque.

13. (Currently amended) An electronic device, comprising a single coil inductance transducer having a single coil and a magnetically permeable member that extends in said single coil, said device further comprising a temperature measurement circuit, a position measuring circuit, and a voltage controlled gain adjusting device, wherein said temperature measurement circuit provides a voltage proportional to temperature to said voltage controlled gain adjusting device to adjust ~~adjusts~~ output voltage of said position measuring circuit ~~single coil inductance transducer~~ to compensate for a change in temperature in said single coil and in said member.

14. (Previously amended) The electronic device as recited in claim 13, wherein said magnetically permeable member is moveable with respect to said single coil.

15. (Previously amended) The electronic device as recited in claim 13, wherein said circuit uses resistance of said single coil to compensate for change in temperature of said single coil and in said member.

16. (Previously amended) The electronic device as recited in claim 13, wherein said ~~sensor~~ single coil inductance transducer comprises ~~is~~ a displacement sensor.

17. (Currently amended) The electronic device as recited in claim 13, wherein said ~~sensor~~ transducer comprises input pads for receiving a first signal and a second signal, said first signal having a higher frequency than said second signal.

18. (Cancel)

19. (Currently amended) The electronic device as recited in claim 13, wherein said ~~circuit~~ voltage controlled gain adjusting device comprises a variable gain amplifier or a microprocessor.

20. (original) The electronic device as recited in claim 13, wherein said magnetically permeable member comprises a highly permeable material.

21. (original) The electronic device as recited in claim 20, wherein said highly permeable material comprises permalloy, ferrite, and 400 series stainless steel.

22. (original) The electronic device as recited in claim 13, wherein said magnetically permeable member comprises magnetoelastic characteristics.

23. (original) The electronic device as recited in claim 22, wherein said magnetoelastic characteristics are modulated by strain, stress, or torque.

24. (Currently amended) An electronic device, comprising a single inductor, a conductive or magnetically permeable member coupled to said single inductor, ~~and~~ a temperature measurement circuit, an inductance measuring circuit, and a voltage controlled gain adjusting device, wherein said temperature measurement circuit provides a voltage proportional to temperature to said voltage controlled gain adjusting device to adjust ~~adjusts a voltage~~ output ~~of~~ voltage of said inductance measuring circuit ~~said single inductor~~ to provide ~~a~~ an adjusted output voltage independent of temperature of said single inductor and temperature of said conductive or magnetically permeable member.

25. (original) The electronic device as recited in claim 24, wherein said magnetically permeable member is moveable with respect to said inductor.

26. (Previously amended) The electronic device as recited in claim 24, wherein said circuit uses resistance of said single inductor to compensate for change in temperature of said single inductor and in said member.

27. (Previously amended) The electronic device as recited in claim 24, wherein said single inductor, member and circuit comprise a sensor.

28. (Previously amended) The electronic device as recited in claim 27, wherein said single inductor, member and circuit comprise a displacement sensor.

29. (Previously amended) The electronic device as recited in claim 28, wherein said sensor comprises input pads for receiving a first signal and a second signal, said first signal having a higher frequency than said second signal.

30. (Cancel)

31. (Currently amended) The electronic device as recited in claim 24, wherein said ~~circuit~~ voltage controlled gain adjusting device comprises a variable gain amplifier or a microprocessor.

32. (original) The electronic device as recited in claim 24, wherein said magnetically permeable member comprises a highly permeable material.

33. (original) The electronic device as recited in claim 32, wherein said highly permeable material comprises permalloy, ferrite, and 400 series stainless steel.

34. (original) The electronic device as recited in claim 24, wherein said magnetically permeable member comprises magnetoelastic characteristics.

35. (original) The electronic device as recited in claim 34, wherein said magnetoelastic characteristics are modulated by strain, stress, or torque.

36-52. (Cancel)

53. (Previously amended) A device comprising a single component, a temperature measurement circuit, a first parameter measuring circuit, and a voltage controlled gain adjusting device ~~and a circuit~~, wherein said temperature measurement circuit provides a voltage proportional to temperature to said voltage controlled gain adjusting device to adjust output voltage of said first parameter measuring circuit ~~wherein said single component is used by said circuit both for sensing a first parameter and for sensing temperature wherein the temperature is used in said circuit for correcting said first parameter~~ to make adjusted output voltage of said of said first parameter measuring circuit independent of change in temperature with time.

54. (Cancel)

55. (Previously amended) A circuit as recited in claim 53, wherein said single component comprises a single inductor.

56. (Cancel)

57. (Previously amended) A circuit as recited in claim 55, wherein said single inductor has a magnetically permeable core.

58. (previously presented) The electronic device as recited in claim 57, wherein said magnetically permeable core has a core length and said single inductor has a single inductor length, wherein said core length is about equal to said inductor length.

59. (Currently amended) The electronic device as recited in claim 53, wherein said voltage controlled gain adjusting device ~~circuit~~ comprises a variable gain amplifier or a microprocessor.

60. (previously presented) The electronic device as recited in claim 53, further comprising a lower frequency power supply and a higher frequency power supply connected to provide a lower frequency and a higher frequency signal to said single component.

61. (previously presented) The electronic device as recited in claim 60, wherein said lower frequency power supply provides direct current.

62. (previously presented) The electronic device as recited in claim 53, further comprising a low pass filter and a high pass filter, each connected to receive an output of said single component.

63. (previously presented) The electronic device as recited in claim 53, further comprising a demodulator positioned after said high pass filter.

64. (previously presented) The electronic device as recited in claim 53, further comprising a difference amplifier connected to receive said low frequency signal output from said coil, wherein said difference amplifier provides a voltage proportional to a temperature of said coil.

65. (previously presented) The electronic device as recited in claim 64, wherein said difference amplifier comprises an instrumentation amplifier.

66. (previously presented) The electronic device as recited in claim 53, further comprising a span adjustment circuit.

67. (previously presented) The electronic device as recited in claim 66, wherein said span adjustment circuit comprises a variable gain amplifier.

68. (previously presented) The electronic device as recited in claim 66, wherein said span adjustment circuit comprises a microprocessor.

69. (previously presented) The electronic device as recited in claim 3, wherein said magnetically permeable member has a member length and said single coil has a coil length, wherein said member length is about equal to said coil length.

70. (previously presented) The electronic device as recited in claim 13, wherein said magnetically permeable member has a member length and said single coil has a coil length, wherein said member length is about equal to said coil length.

71. (previously presented) The electronic device as recited in claim 24, wherein said magnetically permeable member has a member length and said single inductor has an inductor length, wherein said member length is about equal to said inductor length.

72. (previously presented) The electronic device as recited in claim 1, wherein said sensor is to detect the position or presence of a conductive or ferrous target.

73. (previously presented) The electronic device as recited in claim 72, wherein said single coil and said target are non-contacting and wherein relative position of said single coil and said target are measured.

74. (previously presented) The electronic device as recited in claim 72, wherein said target has magnetoelastic characteristics.

75. (previously presented) The electronic device as recited in claim 1, wherein said sensor comprises a displacement sensor, a force sensor, an acceleration sensor, a pressure sensor, or a torque sensor.

76. (previously presented) The electronic device as recited in claim 1, wherein said sensor further comprises a flexure element.